

Observations on Henderson's Ground Jay *Podoces hendersoni* in Xinjiang, China

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Received 28 July 1999

The ground jays, *Podoces*, comprise four species of unusual, terrestrial corvids which inhabit semi-desert regions of Central Asia. Although Henderson's Ground Jay *Podoces hendersoni* has been frequently reported from Mongolia (Stephan 1994), knowledge of its biology is fragmentary. During two weeks of travelling in northern and central Xinjiang (13-25 August 1998), I saw the species on seven occasions and obtained information on its distribution, habitat and behaviour in that region.

Distribution

Locations and approximate altitudes of birds located were obtained using a GPS instrument and an atmospheric-pressure based altimeter (Table 1).

Sites 1 to 6 are in the Junggar Basin. Previously, only Przhevalskii (Deditius 1886) found Henderson's Ground Jay in the Junggar Basin proper, in the desert near Ulungur Lake and Ulungur River, April-May 1879. Eastwards, the habitat may continue to the desert in Hami prefecture, where several explorers found this species: Przhevalskii, the Grum-Grzimailo brothers (Pleske 1892), Carruthers (Ludlow & Kinnear 1933), and Beick (Stresemann *et al.* 1937). Sites 1 to 3 may be seen as a

TABLE 1.
Locations of observations of Henderson's Ground Jays

Site	Date (1998)	Local time (GMT+6h)	Co-ordinates Altitude (m)	Birds, their location and environment
1	14 August	1115	44°50'N, 90°00'E 700	2 adults, depression in pebble desert with scarce low bushes
2	14 August	1200	45°00'N, 90°03'E 1,100	1 adult, vehicle track in gully of pebble-rock desert with dense bushes on bottom of gully
3	14 August	1245	45°14'N, 90°08'E 1,300	Calls, hill top with low bushes in sandstone desert
4	19 August	1015	46°20'N, 85°55'E 700	1 adult, on asphalt road between pebble hillocks with low bushes
5	19 August	1045	46°15'N, 85°53'E 600	1 adult, margin of asphalt road with habitat as in site 4
6	19 August	1140	46°08'N, 85°45'E 400	1 adult, on clay-rock 0.5 km from vegetation (thickets on a sandy plain)
7	22 August	1340	42°14'N, 83°14'E 1,800	1 adult, margin of asphalt road in wide valley with low bushes on clay soil with pebbles

south-east extension of Przhevalskii's area, whereas Sites 4 to 6 are on the opposite side of the basin, in the desert between the eastern Tarbagatai Mountains and Lake Manas. On a recently published map (Cheng 1987), only two recording points fall in the Junggar Basin: a little south of Lake Manas and near Ürümqi.

Within the Tarim Basin I found Henderson's Ground Jay at only one location, Site 7, despite travelling through seemingly suitable habitat for c. 200 km (along the road from Bayanbulak to Kuqa, from Kuqa to Kezir Buddha Caves and Subashi, from Kuqa to Korla, and from Korla to Ürümqi via Toksun, at altitudes between approximately 1,100 and 1,300 m). In the past, Henderson's Ground Jay was frequently found in the northern piedmont zone of the Tarim Basin. Apart for a July record at "Opal, near Kashgar" (references in Hellmayr 1929 and Ludlow & Kinnear 1933), however, these records were not in summer. Grimmett & Taylor (1992) also failed to find them here in June and July. There are August records from the southern rim, between Karakax and Yarkant Rivers (Scully 1876), but these are from sites above 1,800 m.

Although any recent failure to find Henderson's Ground Jay may be due to more or less obvious habitat degradation (see below), these observations could also be explained by altitudinal migration. The ground jays are usually considered to be resident birds, but small-scale movements in response to food availability and weather have been postulated for Pander's Ground Jay *Podoces panderi* (Dementiev & Gladkov 1954), and this seems a likely phenomenon for birds that have to cope with some of the most extreme climates on earth. In Xinjiang, Henderson's Ground jay might thus be found all year at low altitudes in the relatively cool Junggar Basin, whereas the birds inhabiting the hotter plains of the Tarim Basin might move to higher altitudes in summer.

Habitat

Although Henderson's Ground Jay occupies a large geographical range and thus does not seem to be generally threatened (Madge & Burn 1994), large-scale programmes for desert cultivation in both the Junggar and Tarim Basins suggest a less optimistic outlook for a substantial part of the range of this species.

All my observation sites, except Site 6, were characterised by the presence of many pebbles in the soil and of some bushes, a habitat frequently reported for Henderson's Ground Jay. Site 6 differed in being within an extensive "yardang" zone, i. e. a zone of bizarre clay-rock formations produced by alternate water and wind erosion, with negligible vegetation. In this site I failed to find either the insects (Orthoptera) or lizards (*Phrynocephalus* sp.) frequently seen elsewhere. The nearest apparently habitable zone (presumably with sufficient food supplies) was a semi-desert with scattered bushes on purely sandy soil, 0.5 km away.

Sand is usually considered a marginal habitat for Henderson's Ground Jay, but without much reason: although Ludlow judged from his records that the sands of the Tarim Basin were more typical habitat for Biddulph's Ground Jay *Podoces biddulphi*

(Ludlow & Kinnear 1933), Henderson & Hume (1873), Scully (1876), and Divnogorskii (in Dementiev & Gladkov 1954), all recorded Henderson's Ground Jay on sand dunes in that region. Greater specialisation of Biddulph's Ground Jay for sandy soils has also been suggested by its longer and more slender bill. Given the observed occurrence of Henderson's Ground Jay, too, on sandy soils and the presence of Biddulph's Ground Jay in more vegetated desert (see Grimmett 1991 for a recent record), which depends on periodical flooding, habitat discrimination between these species may not be based on the amount of sand itself, but on the amount of periodically flooded areas. Here Biddulph's Ground Jay might use its bill for probing in the mud. I observed mud probing in the related Hume's Groundpecker *Pseudopodoces humilis*, using a hoopoe-like technique (Londei 1998) that would suit the bill of Biddulph's Ground Jay more than of Henderson's. The bottom of the Tarim Basin, where Biddulph's Ground Jay is endemic and Henderson's is absent, probably experiences more flooding than any part of Henderson's range. The stouter bill of Henderson's Ground Jay may be a more useful tool to dispatch coriaceous animals of arid biotopes (see below).

Behaviour

The occurrence of Henderson's Ground Jay near, or even on, roads (Table 1; Sites 2, 4, 5, and 7) is consistent with the previously observed, and probably ancient, habit of this and other ground jays searching for food along caravan paths.

Prolonged observations of behaviour were possible only at Sites 1 and 6. At Site 1, the first bird appeared half an hour after the (only) tourist group arrived. The bird's presence was first revealed by its melodious trills, best rendered as "chur-churi", a Turkmen name for Pander's Ground Jay (Dementiev & Gladkov 1954). Shortly afterwards a second bird appeared, and both kept moving on the ground around the picnicking tourists. Although keeping at a distance of 20-30 m, they seemed reluctant to leave even when approached by a human. They ran with their bills open, as if panting, but closed them at each stop. Running birds were remarkably cryptic: on the folded wing the black and white wing patch was invisible, and the black on the crown and tail were inconspicuous. Given the weak flight of Henderson's Ground Jay and scarcity of cover in its typical habitat, passing unnoticed may be its only protection from attacks by raptors. The birds I was observing visited the base of bushes and every now and then caught an orthopteran, which was mashed by holding it in the bill while the bill was being moved as a sabre against the ground, and then the insect was swallowed. However, they kept close to the tourist group despite the vast uniform land all around, and seemed to be waiting for food items dropped by humans, to which they might be accustomed (Site 1 is a renowned place for visitors to see fossilised trees and is a traditional picnic site).

In Site 6 the single bird, first noticed on a "yardang" hillock, descended to a picnic place containing water-melon remnants and ate something from them, probably the seeds. Although this bird maintained a greater distance from humans than those at Site 1, it seemed likewise reluctant to leave the area when approached. Like other

corvids, ground jays can become bold, though wary, commensals of man: undisturbed Pleske's Ground Jays *Podoces pleskei* can even be fed by hand (Hamedanian 1997). The possible tameness of ground jays and their presence in increasingly accessible areas should enhance the study of these little known birds.

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